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## General Notes.

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### GEOLOGY AND PALEONTOLOGY.

**Notes on the Dinosauria of the Laramie.**—**PTEROPELYX GRALLIPES** gen. et. sp. nov. This dinosaur is represented in my collection by the greater part of the skeleton of an individual found by Mr. J. C. Isaac near Cow Island, Montana, on the upper Missouri, in 1876. I have, as yet, detected no part of the skull or teeth in the collection. The generic characters are seen especially in the pelvis, of which the right half is nearly completely preserved. The ilium is quite elongate and compressed, terminating in flat, narrow plates both fore and aft. The pubis is slender, and its shaft is very small and short, while its pectineal process is extremely long, and expanded distally in a vertical plane, reaching in the specimens anterior to the line of the anterior extremity of the ilium. The inferior border of the acetabulum is thin. The ischium is also very slender, and is coössified proximally with the pubis, and is thence in close contact with it for the rest of its length. The astragalus is not united with the tibia, and the latter has no facet for the fibula on its distal surface. The feet are robust and constructed like those of *Hadrosaurus*, and there is a fourth digit, which is much shorter than the others on the posterior foot. Long bones solid.

This genus differs from the known *Agathaumidæ* in the very different form of the ilium, which is hadrosauroid in form. From both *Hadrosaurus* and *Diclonius* it differs in the probably elongate anterior limbs, which are indicated by the very large pectineal processes, which resemble the pelvis of *Crocodylus*, while the pelvis and ischium are so slender as to be almost functionless. The animal was thus apparently quadrupedal. The absence of the fibular facet of the tibia distinguishes it from the *Diclonius mirabilis*, but this is apparently wanting in the *Hadrosaurus foulkei* Leidy. The genus *Pteropelyx* displays characters between the *Hadrosauridæ* and *Agathaumidæ*. The genus *Cionodon* Cope, which is principally known from teeth, remains to be compared with it, as well as *Dysganus*, which is also known only from teeth.

*Char. specif.* This reptile is about the size of the *Hadrosaurus foulkei* Leidy, as the measurements below given will indicate. The anterior process of the ilium is rather longer than the posterior, is more com-



species has been figured by Marsh (*Amer. Jour. Sci. Arts*, 1889, p. 336), under the name of *Hadrosaurus breviceps*. The lower jaw is figured as the upper, and is printed upside-down on the page.

AGATHAUMIDÆ. It is now evident that the genus *Polygonax* Cope (*Triceratops* Marsh) had elongate frontal horns, a relatively short one on the nasal bones, while *Monoclonius* Cope (*Ceratops* Marsh) has shorter horns on the frontals, and an elongate one on the nasals. The three coössified cervical vertebræ which I described in 1876 (*Proceedings Academy, Phila.*, October,) occupy a position below the posterior prolongation of the parietal bone in *Monoclonius*. This coössification is appropriate to the immovable condition of these vertebræ in the position mentioned. Marsh (*Amer. Jour. Sci. Arts*, 1890, Jan.) denies postacetabular pubes to the members of this family. I find them, however, in *Monoclonius*.—E. D. COPE, *March 5, 1890*.

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## MINERALOGY AND PETROGRAPHY.<sup>1</sup>

**Petrographical News.**—In a most excellent paper, so full of information as to defy any attempt to do it justice in these notes, Lemberg<sup>2</sup> has given the results of his experiments on the stability of many rock-forming minerals when treated with water at high temperatures, and their power of resistance when subjected to the influence of solutions of various salts. The object of the experiments was to determine the cause of the widespread existence of certain minerals like leucite and hauyne in effusive rocks, and their entire absence from intrusive rocks, and also to determine the conditions that gave rise to the properties of elæolite and orthoclase on the one hand, and to nepheline and sanidine on the other. The only conclusions that can be referred to in this place are those with reference to hauyne and leucite. The existence of the former mineral in effusive rocks is ascribed to the oxidizing effects of the oxygen of the atmosphere upon the sulphur compounds of these rocks, and the reactions set up between the solutions thus produced and the constituents of the rocks. The non-existence of this mineral in irruptive rocks is regarded as due to the protection from atmospheric oxygen which these rocks enjoyed as a

<sup>1</sup> Edited by Dr. W. S. Bayley, Colby University, Waterville, Me.

<sup>2</sup> *Zeits. d. deutschen geol. Gesell.*, XL., 1888, p. 625.